Justin Lee

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Education

Stony Brook University — Stony Brook, NY
Master of Science in Applied Mathematics and Statistics (B.S/M.S) — *Aug. 2025 – May 2027*

Stony Brook University — Stony Brook, NY
Bachelor of Science in Computer Science, Applied Mathematics and Statistics — GPA: 3.50 — *Aug. 2023 – May 2027*

Skills

Machine Learning: Supervised & unsupervised learning, neural networks, deep learning, reinforcement learning, scikit-learn, PyTorch, TensorFlow, optimization, gradient descent, backpropagation. NumPy, pandas, statsmodels
Data Engineering: Python, SQL, Java, C++, Git, Docker, Flask, REST APIs, PostgreSQL, MySQL, Supabase
Visualization: Matplotlib, Seaborn, Plotly, Tableau, Streamlit, Jupyter, VS Code, Unity
Front-End Development: HTML, CSS, JavaScript, React, Bootstrap, Figma

Experience

Quantitative Researcher Intern — May 2025 – August 2025
Acadia Analytics — *Cambridge, Massachusetts*

- Improved performance and reliability of proprietary ML training pipelines, boosting trading signal accuracy by 10% through targeted algorithmic enhancements.
- Built and deployed an internal API connecting LLM-based agents to automate and optimize backtesting report generation for quantitative strategies.
- Optimized predictive models and integrated them into a Streamlit dashboard for real-time financial analytics and visualization.

Software Engineer Intern — Jan 2024 – August 2024
Desung Inc. — *New York City, NY*

- Developed a Sokoban-style puzzle game in Java and C#, using Unity to build core gameplay mechanics.
- Engineered an AI-driven puzzle solver with reinforcement learning (Q-learning) and A* search, improving pathfinding efficiency by 17%.
- Enhanced AI decision-making with Monte Carlo Tree Search (MCTS), enabling dynamic move evaluation and procedural puzzle difficulty scaling.

Projects

NBA Statistics Tracker (In progress) | *OpenAI API, RESTful API, LangChain, Python, SQL*

- Developed a natural language-driven basketball analytics app enabling users to query player stats via a search interface.
- Integrated DeepSeek-Coder to convert user inputs into dynamic SQL queries, removing reliance on paid NLP APIs while enabling flexible semantic parsing.
- Built RESTful API endpoints to fetch real-time and historical statistics from a structured database, ensuring fast and scalable backend data delivery.
- Leveraged LangChain to manage LLM-based query processing, enhancing contextual understanding and accuracy of diverse user phrasing.

Pairs Trading Algorithm – AIC Datathon (Finance Track Winner) | *Python, Pandas, Statsmodels, Matplotlib*

- Built a pairs trading strategy on KO and PEP stock using the Engle-Granger cointegration test to identify mean-reverting relationships.
- Generated trading signals and visualized profit opportunities using dynamic threshold bands and backtesting simulations.
- Won 1st place in the Finance Track at SBU's AIC Datathon for demonstrating actionable insights through quantitative analysis.